Tuff-Cam™

Digital Still and Video Camera

User's Manual

PLEASE READ BEFORE OPERATING THE TUFF-CAM
AND RETAIN FOR FUTURE REFERENCE

Model: EDCAM

Table of Contents

1. Important Information

2. Getting to know your Tuff-Cam™

1. Package contents
2. System Requirements and Compatibility
3. Tuff-Cam Specification and Features
4. Location of Controls and Major Parts

3. Installation

1. Preparation
2. Software installation for Windows™ 98 and 98SE
3. Battery and SD memory card installation

4. Display, Controls and Selections

1. Status Icons
2. Controls
3. Selections

5. Getting started

1. Capture
2. Playback
3. Downloading Images & Videos to a PC

6. Maintenance

1. Storage Conditions
2. Important - Special Care Instructions

7. Troubleshooting and Hints

1. Monitor resolution adjustment
2. Using the SD memory card
3. Capturing images in different conditions
4. Windows XP Driver Installation

8. Support & Warranty

9. FCC Information

Please read through this manual carefully before using the Tuff-Cam and follow these instructions to avoid any damage being caused by improper operation and installation

1. Important Information

- The software CD-ROM packaged with the Tuff-Cam is designed for PCs only. Playing this CD-ROM on a stereo or CD player may cause damage to it.
- This Tuff-Cam is a precision electronic device. Do not attempt to service the Tuff-Cam yourself, as opening or removing covers may expose you to dangerous voltage points or other risks.
- Do not expose the Tuff-Cam to direct sunlight to avoid causing a fire.
- Please use the lens cloth to clear the lens and do not touch the lens with fingers.

2. Getting to know your Tuff-Cam™

2.1. Package contents

Please check that the following items are in the package when purchasing this product.

2.1.1. Standard Parts

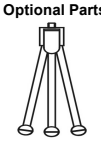
CDROM
(incl. Tuff-Cam driver)

User's manual

Neck Strap

USB Docking Station

2.1.2. Optional Parts



Tripod

Time Lapse Module

Motion Detector Module

2.2. System Requirements and Compatibility

2.2.1. Windows 98 / 98SE / 2000 / Me / XP
2.2.2. Pentium 450MHz or better processor
2.2.3. 128MB RAM or above
2.2.4. VGA Video Card with minimum 32MB RAM, 16-bit or higher colour
2.2.5. An available CDROM driver and an available USB Port
2.2.6. 600MB free hard disc space
2.2.7. Optional: Windows compatible sound card, microphone and speaker

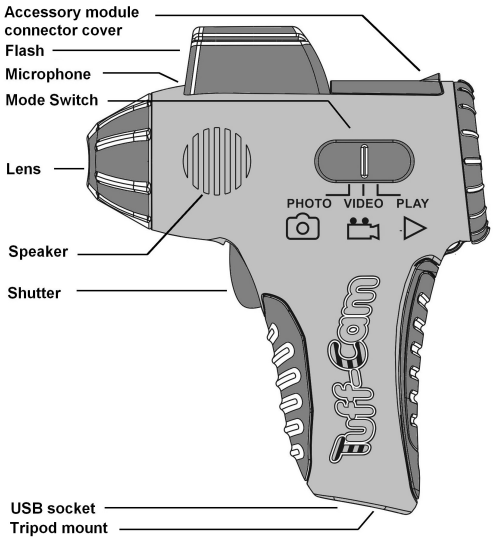
❖ ***Please contact your PC manufacturer for questions on your PC specification***

2.3. Tuff-Cam Features and Specifications

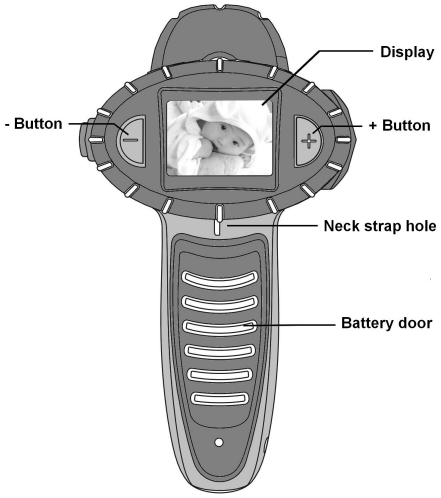
2.3.1. Features

- Colour CMOS Image Sensor 2.0M
- Max Resolution: 3.0M, 2048 x 1536 pixels by hardware interpolation
- Built in 1.5" Colour LTPS display with backlight for image playback and settings
- 2 Capture options: Single image, Video & Voice recording
- 3 Resolution selections: HI (3.0M pixels), LO (1.3M pixels), VGA (300K pixels)
- Image performance for video stream: 10fps at 320 x 240 pixels
- Built in 16MB SDRAM memory for image and video buffer storage
- SD Card slot for additional storage, max memory size up to 1GB
- Photo storage of a typical 64MB SD memory card:
  - 3.0M HI (2048 x 1536): Approx 120 images
  - 1.3M LO (1280 x 1024): Approx 280 images
  - 300K VGA (640 x 480): Approx 1000 images
  - Video (320 x 240): Approx 12 minutes
- Digital zoom: x4, x0.1 per step for still image capturing
- Enable or Disable Date & Time stamp on images
- Automatic or manual control of exposure, white balance and sharpness
- Automatic exposure selectable for 50Hz or 60Hz
- Selectable flash settings: Auto, Manual, Off
- Real time clock setting for Date, Clock and Time stamp
- Adjustable auto power off time
- High precision 4 piece glass lens with IR coating
- Focusing: 1.5m (minimum) to Infinity
- Effective viewing angle: 54 deg
- Auto battery low detection
- Power consumption:
  - 230mA +/-20mA when display on
  - 160mA +/- 10mA when display off
  - No power consumption when powered off or USB cable is connected
- Interface type: USB 1.1
- Image format: JPG, Motion JPEG
- Friendly English user interface
- Batteries: AA alkaline batteries x 2
- Product measurements: W79 x H137 x T113mm. Weight 120g not including batteries.
- Storage conditions: -20ºC to 55ºC, 20-85% R.H., non-condensing

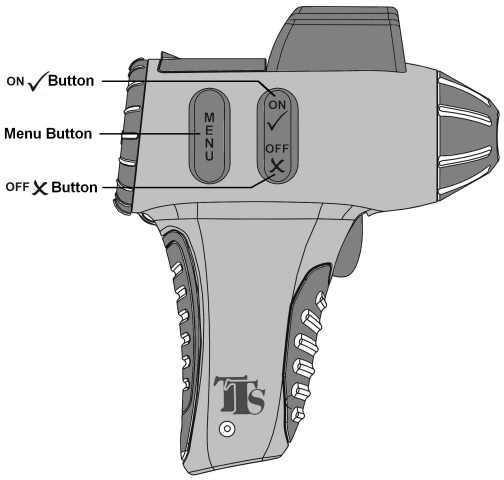
2.4. Location of Controls and Major Parts



- **Accessory module connector cover:** Remove to connect an accessory module
- **Flash light:** Required for image taking in darkened conditions
- **Microphone:** Used for audio and voice recording
- **Mode switch:** Slide to change the Tuff-Cam mode to Photo, Video or Playback
- **Lens:** Window to capture the image
- ***Please do not touch the lens with fingers as it could be damaged or scratched and poor image will be recorded.***
- **Speaker:** To playback the voice or audio recording
- **Shutter button:** Press this trigger button to take a photo or press and hold the button to take a video
- **USB socket:** Connects Tuff-Cam to PC and docking station for image downloading
- **Tripod mount:** For accessory tripod mounting



- **Display:** LTPS colour display to show the captured image or preview the image
- **-:** Press this button to zoom out during photo mode. Also used to move selection in menus and decrease values. This button is disabled when Tuff-Cam is connected to a PC.
- **+:** Press this button to zoom in during photo mode. Also used to move selection in menus and increase values. This button is disabled when Tuff-Cam is connected to a PC.
- **Neck strap hole**: To mount the neck strap or wrist strap
- **Battery door:** Open this door to insert or replace batteries, or to insert SD card



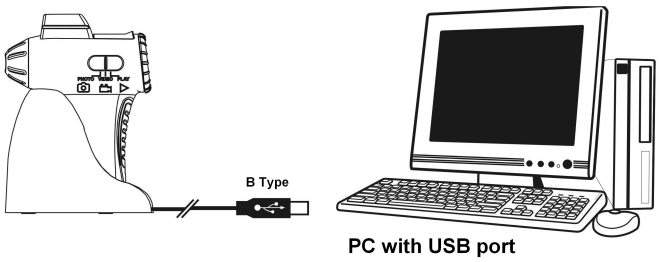
- MENU Press this button to enter the Menu system
- ON ✓ Press and hold this button to turn on the Tuff-Cam, or to confirm the menu system settings
- OFF ✕ Press and hold this button to turn off the Tuff-Cam, or to exit the menu system

3. Installation

3.1. Preparation

- CDROM containing Ulead Photo Explorer 8 application program and Tuff-Cam drivers for Windows™ 98 or 98SE and Mac OS
- Docking station with USB cable (included)
- 2 x AA alkaline batteries (not included)

3.2. Software installation for Windows™ 98 and 98SE



3.2.1. Unplug the USB cable from PC

3.2.2. Insert the Tuff-Cam CDROM in CD drive of your PC

3.2.3. The auto-run program will execute

3.2.4. Follow the instructions shown on screen from your PC to completely install the driver and application program

3.2.5. Restart windows

3.2.6. Successful installation will create **"Ulead Photo Explorer"** icon on your desktop

3.2.7. Connect your Tuff-Cam to the PC with the USB cable, the PC will recognize the new device and set up the configuration of the PC automatically

- ***If your computer doesn't run automatically, please click "Start" button and choose "Run", and then browse the CD drive and click "Autorun"***
- ***Operation manual of Ulead Photo Explorer is contained on the provided CDROM***

3.3. Battery and SD memory card installation

3.3.1. Use a small Philips screwdriver to loosen the screw and open the battery door

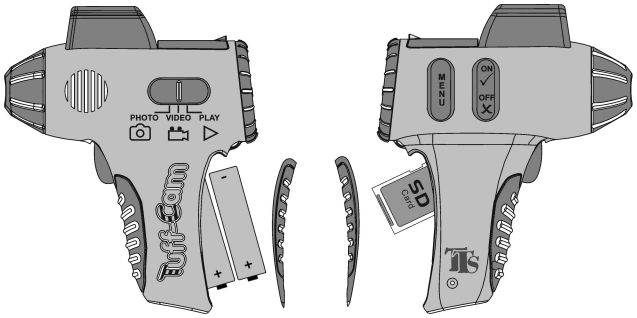
3.3.2. Insert 2 AA alkaline batteries into the battery compartment in the correct direction as shown

- ***Alkaline batteries should be used***
- ***Ensure the battery polarity is correct as shown***

3.3.3. Push the SD memory card fully into the SD socket until it clicks, ensuring the correct direction as shown. To release the SD memory card, press it in again and the card will eject.

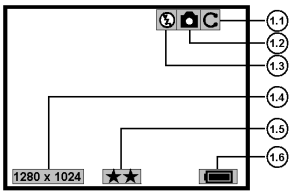
3.3.4. Close the battery door carefully then use the screwdriver to tighten the screw

- ***Please ensure the protection lock of the SD card is in the unlocked position***



4. Display, Controls and Selections

4.1. Status Icons



4.1.1. **Card inserted:** If memory card is installed, Tuff-Cam will show **C** on the display

4.1.2. **Capture Mode:** This shows the status of capture selections that you have selected

- **Single Image Capture:** When selected, press the shutter to capture a still image
- **Video & Voice Capture:** When selected, press the shutter button to start the capture of video and voice recording, and release to stop recording

4.1.3. **Flash Mode:** This shows the status of the flash

- **Auto:** When selected, the Tuff-Cam will check the light conditions to control the flash automatically
- **Manual:** When selected, the Tuff-Cam will turn on the flash without checking the light conditions
- **Off:** When selected, the Tuff-Cam will not use the flash

4.1.4. **Resolution:** This shows the resolution that has been selected

- **2048 x 1536** **3.0M:** Select this option to capture a 3.0M pixels high resolution image.
- **1280 x 1024** **1.3M:** Select this option to capture a 1.3M pixels normal resolution image.
- **640 x 480** **VGA:** Select this option to capture a 300K pixels low resolution image.
- **320 x 240** **Video resolution:** The resolution of Video capturing is 100K pixels.

4.1.5. **Batteries Status:**

- **Full:** Shows the batteries are full
- **Low:** Shows the batteries are low and should be replaced

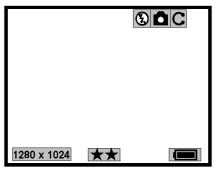
4.2. Controls

4.2.1. Turn Tuff-Cam on or off

- Press and hold ON ✓ to turn on Tuff-Cam
- Press and hold OFF ✕ to turn off Tuff-Cam

4.2.2. Change Tuff-Cam to PHOTO Mode

- Slide the mode switch to PHOTO, the display will show the live image
- Tuff-Cam is ready for you to capture a photo



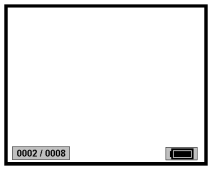
Display in PHOTO Mode

4.2.3. Change the Tuff-Cam to VIDEO Mode

- Slide the mode switch to VIDEO, the display will show the live image
- Tuff-Cam is ready to capture a video

4.2.4. Change the Tuff-Cam to PLAY Mode

- Slide the mode switch to PLAY, the display will show the captured photos
- Tuff-Cam ready to playback captured photos or videos



Display in PLAY Mode

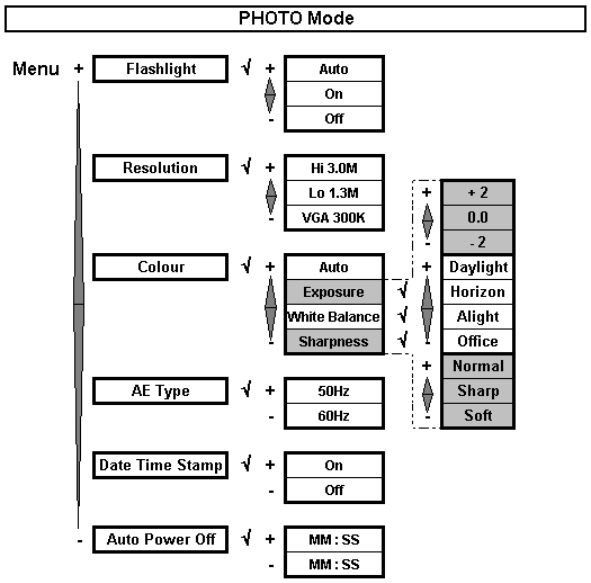
4.3. Selections

4.3.1. Select the options and settings from PHOTO Mode

Slide the MODE switch to PHOTO when the Tuff-Cam is turned on, and then follow the chart below and steps to change the selections and settings:

- Press MENU to enter the Photo menu system
- Press ◄ or ► to change the selection
- Press ON ✓ to confirm
- Press ◄ or ► to change the settings
- Press ON ✓ to confirm the settings
- Press OFF ✕ to go back one level in the menu system

- ***If no buttons are pressed within 10 seconds, the unit will return to Photo mode***



4.3.2. Setting Flash Mode and Image Quality from PHOTO mode

4.3.2.1. Setting the Flash Mode

Press MENU and press ◄ or ► to select **Flash**, then press ON ✓ to confirm

Press ◄ or ► to select **Auto**, **On** or **Off**, then press ON ✓ to finish

4.3.2.2. Setting the Resolution

Press MENU and press ◄ or ► to select **Resolution**, then press ON ✓ to confirm

Press ◄ or ► to select **Hi 3.0M**, **Lo 1.3M** or **VGA 300K**, then press ON ✓ to finish

4.3.2.3. Setting Exposure and Colour modes

- To set Tuff-Cam to automatically use the best settings:

  Press MENU and press ◄ or ► to select **Colour**, then press ON ✓ to confirm

  Press ◄ or ► to select **Auto**, then press ON ✓ to finish

- To override automatic settings and set specific Exposure value in **Colour** menu:

  Press ◄ or ► to select **Exposure**, then press ON ✓ to confirm

  Press ◄ or ► to set the value between +2 and -2 and press ON ✓ to finish

- To override automatic settings and set specific White Balance value in **Colour** menu:

  Press ◄ or ► to select **White Balance**, then press ON ✓ to confirm

  Press ◄ or ► to set **Daylight**, **Horizon**, **Alight** or **Office**, then press ON ✓ to finish

- To override automatic settings and set specific Sharpness value in **Colour** menu:

  Press ◄ or ► to select **Sharpness**, then press ON ✓ to confirm

  Press ◄ or ► to set **Normal**, **Sharp** or **Soft**, then press ON ✓ finish

- To set Auto Exposure (AE) value for your country:

  Press MENU and press ◄ or ► to select **AE Type**, then press ON ✓ to confirm

  Press ◄ or ► to select **50Hz** or **60Hz**, then press ON ✓ to finish

❖ ***Using correct AE type will eliminate flicker effect on the image so please select it according to the country that you are located in***

4.3.2.4. To Set Date Time Stamp

- Press ◄ or ► to select **Date Time Stamp**, then press ON ✓ to confirm
- Press ◄ or ► to select **On** or **Off**, then press ON ✓ to finish

❖ ***Turn on the Date Time Stamp to stamp the date and time on the captured image. Ensure you set the date and time (from PLAY mode) first***

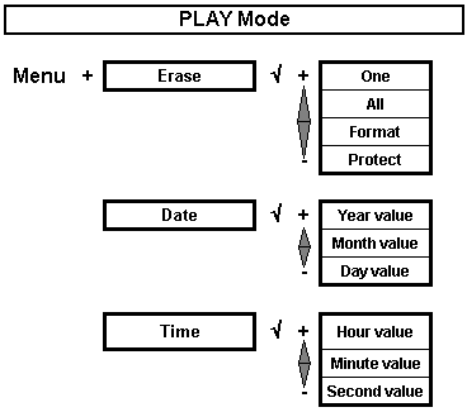
4.3.2.5. To set the Auto Power Off delay time

- Press ◄ or ► to select **Auto Power Off**, then press ON ✓ to confirm
- Press ◄ or ► to set auto power off timer minutes and seconds
- Press ON ✓ to confirm and leave the selection

❖ ***Setting the Auto power off timer to a short time will increase the battery life***

4.3.3. Set the selection and setting from playback mode

Slide the MODE switch to PLAY when the Tuff-Cam is turned on, and then follow the chart below and steps to change the selections and settings:



4.3.3.1. Erasing Images or Videos

- Press MENU and press ◄ or ► to select **Erase**, then press ON ✓ to confirm
- Press ◄ or ► to select **One**, **All**, **Format** or **Protect**, then press ON ✓ to finish

❖ ***Once you have selected Erase One, Erase All or Format, the data or images will be deleted from memory and you will not be able to restore them. If there are no images stored in memory the Erase One and Erase All options will not be displayed in the erase selections***

4.3.3.2. Setting the Date

- Set Year value:

  Press ◄ or ► to select **Date**, then press ON ✓ to confirm

  Press ◄ or ► to select **Year**, then press ON ✓ to confirm

  Press ◄ or ► to change the value, then press ON ✓ to finish setting Year

- Set Month value:

  After selecting **Date**, press ◄ or ► to select **Month**, then press ON ✓ to confirm

  Press ◄ or ► to change the value, then press ON ✓ to finish setting Month

- Set Day value:

  After selecting **Date**, press ◄ or ► to select **Day**, then press ON ✓ to confirm

  Press ◄ or ► to change the value, then press ON ✓ to finish setting Day

4.3.3.3. Setting the Time

- Set Hour value:

  Press ◄ or ► to select **Time**, then press ON ✓ to confirm

  Press ◄ or ► to select **Hour**, then press ON ✓ to confirm

  Press ◄ or ► to change the value, then press ON ✓ to finish setting Hours

- Set Minute value:

  After selecting **Time**, press ◄ or ► to select **Minute**, then press ON ✓ to confirm

  Press ◄ or ► change the value, then press ON ✓ finish setting Minutes

- Set Second value:

  After selecting **Time**, press ◄ or ► to select **Second**, then press ON ✓ to confirm

  Press ◄ or ► change the value, then press ON ✓ finish setting Seconds

5. Getting started

5.1. Capture

5.1.1. Capturing a still image

- Turn the Tuff-Cam on by pressing and holding ON ✓
- Set the Tuff-Cam mode to Photo by sliding the mode switch to PHOTO
- Hold the Tuff-Cam steady with your hands
- Display will show the live image that is being pointed at
- Point the Tuff-Cam at the object you wish to photograph
- Press the **Shutter button** once to capture an image

5.1.2. Capturing a Video with Voice

- Turn the Tuff-Cam on by pressing and holding ON ✓
- Set the Tuff-Cam mode to Video by sliding the mode switch to VIDEO
- Hold the Tuff-Cam steady with your hands.
- Display will show the live image that is being pointed at
- Point the Tuff-Cam at the scene you wish to video
- Press and hold the **Shutter button**
- Video is recording
- To stop the recording, just release the shutter button

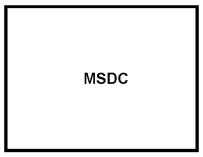
❖ ***Note that the video resolution is fixed at 320 x 240 pixels***

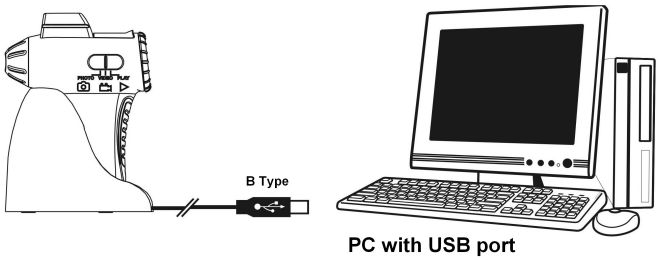
5.2. Playback

- Turn the Tuff-Cam on by pressing and holding ON ✓
- Set the Tuff-Cam mode to Playback by sliding the mode switch to PLAY
- Display will show the captured photos and video
- Press ◄ or ► to scroll backward or forward through the photos

5.3. Downloading the images and videos to a PC

- Turn the Tuff-Cam on
- Slide the mode switch to PLAY
- Put the Tuff-Cam into the docking station
- Connect the Tuff-Cam to the PC with the USB cable of docking station
- Display will show “MSDC”
- The PC will recognize the Tuff-Cam as a mass storage disk and will be found when you open the My Computer icon from your desktop
- Open the mass storage disk then copy or cut the images to your PC.





PC with USB port

6. Maintenance

6.1. Storage conditions

- Operating Environment: 5ºC to 40ºC, 20-85% relative humidity, non-condensing

6.2. Special care instructions!!

- Never immerse the Tuff-Cam into any fluid or liquid
- Remove dust or stains with a soft cloth dampened with water or neutral detergent
- Keep the Tuff-Cam in a dry and cool dust-free environment or container when it is NOT being used
- Take the batteries out when the Tuff-Cam is NOT to be used over a long period
- Avoid dropping the Tuff-Cam on to hard ground
- Do not disassemble the Tuff-Cam
- Static discharge may cause the operation fail or damage the Tuff-Cam

7. Troubleshooting and Hints

7.1. Monitor resolution adjustment

You need to set the display of your PC monitor resolution to 16-bit colour or higher for optimum image display. Please refer to the display card manual or follow the procedure below:

- Click the Windows Start button
- Click settings and then Control Panel from the pop-up menus
- Double click the Display icon
- Click the Setting tab
- Select High Colour (16 bit) or True Colour (24 bit) from the list box
- Click OK. You may need to update the monitor driver to change to the new setting
- Restart your computer

7.2. SD memory card use

You are recommended to **FORMAT** the SD memory card before you save an image to it when:

- You use a new SD Card
- You have used the SD card in other digital devices (as the format of the SD card might have changed when using other devices due to non-standard formats)

7.3. Capturing Images in different conditions

If the image capture conditions are outside normal limits, please select the correct white balance:

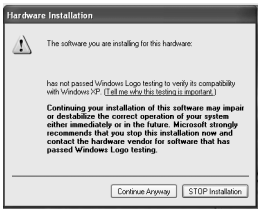
- Daylight, when the target object is under in direct sunlight
- Horizon, when the object is under a cloudy sky
- Alight, when the object is under Tungsten light
- Office, when the object is under Fluorescent light

To prevent the camera shaking when held in the hand, please use a tripod to hold the Tuff-Cam when capturing a high-resolution image

7.4. Windows XP Driver Installation

Although the **Tuff-Cam** device driver is compatible with Windows XP, you may find the error message shown here.

Please click “**Continue Anyway**” and complete the rest of the installation process.


Hardware Installation
The software you are installing for this hardware:
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

8. Support & Warranty

This product is provided with a one-year warranty for problems found during normal usage. Mistreating the Tuff-Cam or opening the unit will invalidate this warranty.

All out of warranty repairs will be subject to a replacement fee.

Please visit **www.tuff-cam.co.uk** for hints and tips and latest product information.

Email **techsupport@tuff-cam.co.uk** for technical support.

Tuff-Cam™

TTS Group Ltd
Unit 1
Park Lane Business Park
Kirkby in Ashfield
Nottinghamshire, UK
NG17 9LE

Freephone: 0800 318686
Freefax: 0800 137525

0-3 CE

9. FCC Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modification to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limited for Class B digital device, pursuant to Part 15 of the FCC Rules. Their limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If the equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WF064 Rev 1.0. Printed in China.